THUNDERSTORMS, HAIL, STRAIGHT-LINE WINDS & LIGHTNING

- Thunderstorms affect relatively small areas when compared with hurricanes and winter storms. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Nearly 1,800 thunderstorms are occurring at any moment around the world. That's 16 million a year!

- Despite their small size, **all** thunderstorms are dangerous. Every thunderstorm produces lightning, which kills more people each year than tornadoes. Heavy rain from thunderstorms can lead to flash flooding. Strong winds, hail, and tornadoes are also dangers associated with some thunderstorms.

- Of the estimated 100,000 thunderstorms that occur each year in the United States, only about 10 percent are classified as **severe.**

- Your National Weather Service considers a thunderstorm severe if it produces hail at least 3/4-inch in diameter, wind 58 mph or higher, or tornadoes.

Large Hail

- Causes nearly $1 billion in damage to property and crops annually.
- Costliest United States hailstorm: Denver, Colorado, July 11, 1990. Total damage was $625 million

Straight-line Winds

- Responsible for most thunderstorm wind damage.
- Winds can exceed 100 mph!
- July 2008 was a good example of the devastation straight-line winds can inflict.
- One type of straight-line wind, the ***downburst,*** can cause damage equivalent to a strong tornado and can be extremely dangerous to aviation.
- A “dry microburst” is a downburst that occurs with little or no rain. These destructive winds are most common in the western United States.

Lightning

- Lightning causes an average of 80 fatalities and 300 injuries each year.
- Lightning occurs in all thunderstorms; each year lightning strikes the Earth 20 million times.
- The energy from one lightning flash could light a 100-watt light bulb for more than 3 months.
- Most lightning fatalities and injuries occur when people are caught outdoors in the summer months during the afternoon and evening.
- Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air.
- Many fires in the western United States and Alaska are started by lightning.
- The air near a lightning strike is heated to 50,000°F The rapid heating and cooling of the air near the lightning channel causes a shock wave that results in . – *hotter than the surface of the sun!* **thunder**

LIGHTNING Facts and Myths

MYTH: If it is not raining, then there is no danger from lightning.
FACT: Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall. This is especially true in the western United States where thunderstorms sometimes produce very little rain.

MYTH: The rubber soles of shoes or rubber tires on a car will protect you from being struck by lightning.
FACT: Rubber-soled shoes and rubber tires provide protection from lightning. The steel frame of a hard-topped vehicle provides increased protection if you are not touching metal. Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.

MYTH: People struck by lightning carry an electrical charge and should not be touched.
FACT: Lightning-strike victims carry no electrical charge and should be attended to immediately. Contact your local American Red Cross chapter for information on CPR and first aid classes.

MYTH: “Heat lightning” occurs after very hot summer days and poses no threat.
TRUTH: “Heat lightning” is a term used to describe lightning from a thunderstorm too far away for thunder to be heard.

Lightning Safety Rules

- Postpone outdoor activities if thunderstorms are imminent. This is your best way to avoid being caught in a dangerous situation.
- Move to a sturdy building or car. Do not take shelter in small sheds, under isolated trees, or in convertible automobiles. Stay away from tall objects such as towers, fences, telephone poles, and power lines.
- If lightning is occurring and a sturdy shelter is not available, get inside a hard top automobile and keep the windows up. Avoid touching any metal.
- Utility lines and metal pipes can conduct electricity. Unplug appliances not necessary for obtaining weather information. Avoid using the telephone or any electrical appliances. Use phones ONLY in an emergency.
- Do not take a bath or shower during a thunderstorm.
- Turn off air conditioners. Power surges from lightning can cause serious damage.
- Find a low spot away from trees, fences, and poles. Make sure the place you pick is not subject to flooding.
- If you are in the woods, take shelter under the shorter trees.
- If you feel your skin tingle or your hair stand on end, squat low to the ground on the balls of your feet. Place your hands over your ears and your head between your knees. Make yourself the smallest target possible and minimize your contact with the ground. DO NOT lie down.
- If you are boating or swimming, get to land and find shelter immediately!